L 31846-65 EWT(l)/EWT(m)/T/EWP(t)/EEC(b)-2/EWP(b) IJP(c) JD

ACCESSION NR: AP5004590 S/0020/65/160/002/0317/0320

AUTHORS: Geguzin, Ya. Ye., Boyko, Yu. I.

TITLE: Influence of small pressures on the mutual diffusion in ionic single crystals

SOURCE: AN SSSR. Doklady, v. 160, no. 2, 1965, 317-32-, and bottom half of insert facing p. 314

TOPIC TAGS: ionic crystal, single crystal, mutual diffusion, diffusion coefficient, pressure effect

ABSTRACT: The article reports the results of the experimental investigation of the influence of small pressures on the mutual diffusion in ionic crystals, undertaken not only to trace the changes of the conditions under which diffusion porosity arises and develops, but also to investigate the associated change in effective coefficient of mutual diffusion. The main experiments were made

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ACCESSION NR: AP5004590

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with samples of the KCl-KBr system, and consisted of bringing single-crystal plates of KCl and KBr in contact along the natural cleavage plane (100), and subjecting the crystals to isothermal annealing in a vertical furnace, in which compressive forces could be applied to the sample. The distribution of the components in the diffusion zone was investigated by an x-ray method which is described. The effective diffusion coefficient was determined from the concentration curves by the Matano method. The results indicate that the change in diffusion coefficient due to the applied pressure does not depend on the concentration. The observed influence of small pressures on the effective diffusion coefficient is attributed to the fact that the pressure deactivates the impurities and prevents coagulation of excess vacancies, thus blocking the paths along which the diffusion is realized. The mechanism whereby these paths are blocked is discussed. This report was presented by P. A. Rebinder. Orig. art. has: 4 figures.

Card 2/3

L 31846-65
ACCESSION NR: AP5004590

has: 4 figures.

ASSOCIATION: Khar'kovskiy gosudatstvennyy universitet im. A. M. Gor'kogo (Kharkov State University)

SUBMITTED: 09Jun64 ENCL: 00 SUB CODE: SS

NR REF SOV: 005 OTHER: 002

Card 3/3

L 30198-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6012516 SOURCE CODE: UR/0181/66/008/004/1304/1306

54
B

AUTHORS: Geguzin, Ya. Ye.; Solunskiy, V. I.; Boyko, Yu. I.

ORG: Khar'kov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Mutual diffusion in KCl-KBr single crystals in a constant external electric field

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1304-1306

TOPIC TAGS: potassium chloride, potassium bromide, sandwich structure, physical diffusion, electric field, crystal vacancy

ABSTRACT: This is a continuation of earlier work by the authors (DAN SSSR v. 160, 317, 1965 and v. 156, 644, 1964). The experiments consisted of annealing a sandwich structure KCl-KBr-KCl at temperatures 530, 580, 620, 650, and 680C in a constant electric external field. The field intensity varied from 10 to 150 v/cm, with the field vector perpendicular to the plane of contact between the single-crystal plates. A slight pressure was applied to eliminate the porosity due to diffusion. The concentration distribution was determined by removal of layers followed by determination of the crystal lattice parameter with the aid of a diffractometer (URS-50). The results showed that the external electric

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ACC NR: AP6012516

field shifts the concentration curve somewhat and deforms it slightly. The experimental data can be used to determine the effective coefficient of chemical diffusion in two ways: from the concentration distribution curve and from the shift of the concentration curve obtained in experiments without application of the field and from the shift due to the field. An important result of the comparison of the diffusion coefficients is that the ratio of the coefficient without and with field increases with increasing temperature. This indicates that some of the vacancies are electrically neutral. This may also explain the reason why the concentration curve shifts more towards the KCl than the KBr. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 22Nov65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ANIKIN, V.L. (Donetsk); BOYKO, Yu.Kh. (Donetsk)

Organization of the repair of heavy track maintenance machinery. Put' i put.khoz. 9 no.5:24-26 '65. (MIRA 18:5)

Boyko, Yu.N.

3C

L 3975' 65 EWG(j)/EWT(m)/EPF(c)/EWP(t)/EPF(n)-2/EPR/EWP(b) Pr-4/Ps-4/Pu-4
IJP(c) JD

ACCESSION NR: AP4047423 S/0136/64/000/010/0045/0047

AUTHORS: Andreyev, A.Ye.; Rodyakin, V.V.; Vaynshteyn, G.M.; Kargin, V.M.; Brodskiy, E.Ye.; Boyko, Yu.N.; Tkalich, V.S.; [illegible]barova, N. P.

TITLE: Changes in magnesium quality during th[illegible] process

SOURCE: Tsvetny*ye metally*, no. 10, 1964, 45-47

TOPIC TAGS: nitrogen, oxygen, chlorine, impurity, magnesi[illegible], flux refinement, recovery, transport

ABSTRACT: The method of oxygen and nitrogen control in magnesium was used to assess the effectivity of removing admixtures. Flux refining was employed and specimens taken from two cells of each electrolyzer as well as before and after refining and 15 to 20 min settling. The quality of refined Mg did not differ substantially from that of the crude ore. The amounts of Fe in Mg changed neglibility and the higher content in the crude product was attributed to the drastic temperature drop that accompanies the transport of the metal to the refining furnaces. Neither did chlorine undergo any major changes and the proposed process did not affect the quality

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L 39755-65

ACCESSION NR: AP4047423

of the metal with respect to chlorine. Thus, the authors were able to retain the original level of oxygen and nitrogen in Mg by combining the proper temperature conditions with flux refining and settling time. The combined refining process is recommended until the transport of crude Mg is improved at which time it will become possible to use crude Mg as a reducing agent. Orig. art. has: 1 table and 1 figure.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 006 OTHER: 002

Card 2/2

L 21201-65 EPA(s)-2/EWT(m)/EPF(n)-2/EPR/EWP(t)/EPA(bb)-2/EWP(b) Ps-4/
Pad/Pt-10/Pu-4 IGP(c) JD/WW/HW/JG
ACCESSION NR: AP5000940 S/0136/64/000/012/0053/0056

AUTHOR: Rodyakin, V.V., Andreyev, A. Ye., Boyko, Yu.N., Vaynshteyn, G.M., Kargin, V.M., Brodskiy, E.Ye., Khabarova, N.P., Tkalich, V.S.

TITLE: Transportation of liquid metallic magnesium

SOURCE: Tsvetnyye metally, no. 12, 1964, 53-56

TOPIC TAGS: liquid magnesium, liquid magnesium transport, titanium production, magnesium contamination, vacuum ladle, nickel impurity

ABSTRACT: A special vacuum ladle was designed for the transportation of liquid magnesium which protects against reaction with nitrogen and oxygen and contamination by inclusions. The metal was sampled from the electrolytic cells, from the vacuum ladle and from the reactor, which is the route the magnesium followed, and the content of O, N, Cl, Fe, Si and Ni was determined in these samples. The content of all impurities except nickel dropped during the intake and transportation of the magnesium. The quality of the magnesium deteriorated when charged into the reactor, the nitrogen and oxygen contents in the samples having increased owing to poor air-tightness of the charging unit. The content of chlorine also increased. The magnesium was contaminated with nonmetallic

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L 21201-65
ACCESSION NR: AP5000940

inclusions mainly during the operations of sampling from the electrolytic cells and when pouring into the reducing reactors; the content of metallic impurities remained unchanged. To improve the sampling methods, and thus avoid contamination, further studies are to be directed toward excluding contact of the magnesium with the air, creation of a shielding atmosphere, and reduction of the number of operations associated with pouring the liquid magnesium from vessel to vessel. "Ye. V. Pirozhok, S.V. Yurchenko (deceased), I.P. Muntyanov, N. Yu. Sukhorukova, N.K. Bulanaya, N. Ya. Akhtemenko and A.M. Bragin also took part in the work." Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 01 SUB CODE: MM, IE

NO REF SOV: 001 OTHER: 000

Card 2/3

L 21201-65
ACCESSION NR: AP5000940

ENCLOSURE: 01

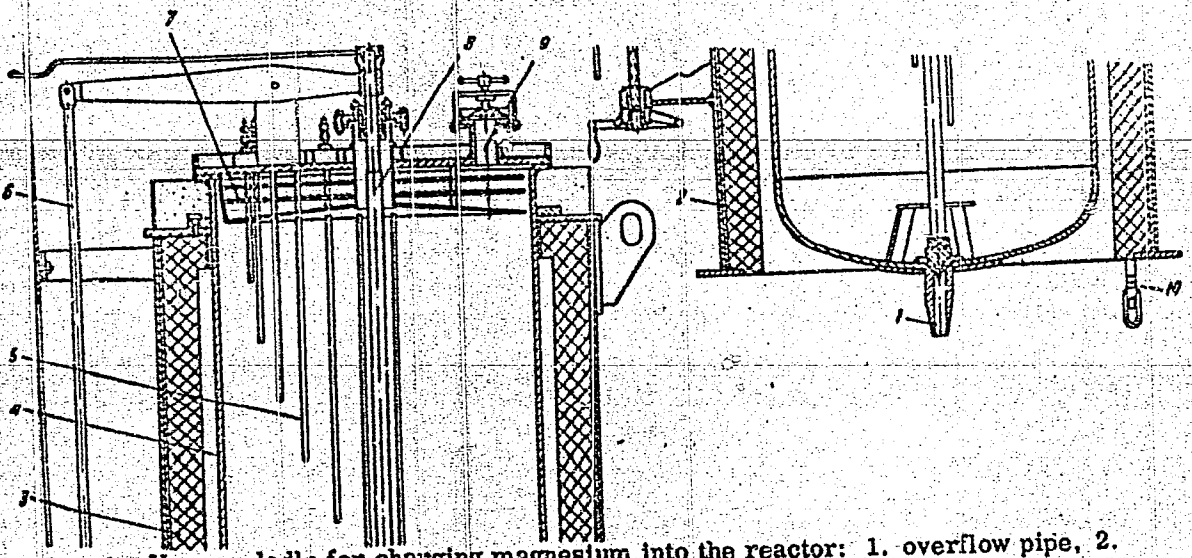

Fig. 1. Vacuum ladle for charging magnesium into the reactor: 1. overflow pipe, 2. casing; 3. lining; 4. crucible; 5. level gage; 6. drive of shut-off device; 7. shield; 8. rod; 9. hatch for sampling; 10. device for fastening intake pipe.

Card 3/3

KUZNETSOV, N.Ye., inzh.; BURATOV, G.N., inzh.; BOYKO, Yu.P., inzh.; FEDOROVSKIY, V.V., inzh.

Radio control of switches. Zhel.dor.transp. 43 no.6:73 Je '61.
(Railroads--Switching--Radio control)

SOLOV'YEV, V.V.; BOYKO, Yu.S

Removing dust from flue gases. Metallurg 10 no.4:16-17 Ap '65.
(MIRA 18:7)

1. Zavod "Zaporozhstal'".

BOYKO, Yu.V., inzh.; BOYKO, V.I., inzh.

Effect of nonstationary processes on the operation of a transistorized directional power relay. Energ. i elektrotekh. prom. no.1:17-19 Ja-Mr'64. (MIRA 17:5)

BOYKO, Z.F.

Changes in the functional state of the isolated nerve under the influence of lead. Izv. AN Kazakh. SSR. Ser. biol. nauk 3 no.6:96-102 N-D '65. (MIRA 18:12)

BOYKO, Z.S.

Effect of cold stimulation of the skin on function of the tonsils. Vest. otorinolar., Moskva 15 no. 1:50-55 Jan-Feb 1953. (CLML 24:1)

1. Of the Third Clinical Division (Head -- Prof. V. F. Undritz, Corresponding Member AMS USSR) and the Microbiological Division (Head -- Senior Scientific Associate O. Yu. Lakotkina), Leningrad Scientific-Research Institute for Diseases of the Ear, Throat, Nose, and Speech (Director -- Prof. I. A. Lopotko; Scientific Supervisor -- Prof. V. I. Voyachek, Active Member AMS USSR).

BOYKO, Z.S.

Case of median fistulas of the nasal ridge. Vest.oto-rin.15 no.6:74-75 N-D '53. (MLRA 7:1)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta po boleznyam ukha, gorla, nosa i rechi (direktor - professor I.A.Lopotko, nauchnyy rukovoditel' - deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR professor V.I.Voyachek).
(Nose--Abnormities and deformities) (Fistula)

BOYKO, Z. S.

BOYKO, Z. S. -- "The Effect of Remote Cooling of the Skin on the Functional State of the Tonsils." First Leningrad Medical Inst Imeni Academician I. P. Pavlov. Leningrad, 1955. (Dissertation for the Degree of Candidate in Medical Sciences).

So.: Knizhnaya Letopis', No. 6, 1956.

BOYKOV, A.

New trends in coordinating apartment house designs. Pozh. delo 4 no.5:8 My '58. (MIRA 11:5)

1. Nachal'nik Upravleniya pozharnoy okhrany Moskovskoy oblasti.
(Apartment houses—Fires and fire prevention)

BOYKOV, A.; KOSSARZHEVSKIY, M.

Fire in a high-power transformer. Pozh. delo 4 no.6:17 Je '58.
(Electric power plants--Fires and fire prevention) (MIRA 11:5)

BOYKOV, A.A.

MITROV, B.A.; BOYKOV, A.A.

A mercury vacuum shut-off device designed for gas inlets. Zav. lab. 21 no. 7:871-872 '55. (MLRA 8:10)

1. Geofizicheskiy institut Akademii nauk SSSR
(Vacuum apparatus)

L 01000-67 EWT(1)/EWT(m) DJ/JD

ACC NR: AR6022146 SOURCE CODE: UR/0276/66/000/002/B121/B121

AUTHOR: Dudnikov, V. T.; Boykov, A. D.

48 B

TITLE: A hydraulic copying system with a second-order floating control and a procedure for selecting its parameters

SOURCE: Ref. zh. Tekhn mashinostr, Abs. 2B896

REF SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 20, ch. 1, 1965, 135-158

TOPIC TAGS: automatic copying system, automatic control system, floating control, copying system

ABSTRACT: This article presents design and structural diagrams of a system which can be applied to machining of a single-coordinate part copying system by master form, and the equations for the system and its elements: the section of the hydro-amplifier component, and the adjusting element. The quality of the automatic copying system is analyzed. It has been established that the automatic copying system has satisfactory amplitude and phase stability and high operational capacity. The amplification coefficient of an open system numerically surpasses second-order floating control electric automatic copying systems. The selection technology is described of

Card 1/2 UDC: 621.9.06-503.53-822

L 01932-67

ACC NR: AR6022146

the initial parameters of the automatic copying system, its design and adjustment parameters. Orig. art. has: 8 figures, 1 table and a bibliography of 7 reference items. L. Romancheva. [Translation of abstract] [AM]

SUB CODE: 13/

hs

Card 2/2

Boykov A. G.

PHASE I BOOK EXPLOITATION 671

Kukushkin, Aleksandr Ivanovich; Boykov, Aleksandr Geogriyevich; Ivanov, Anatoliy Nikolayevich

Teploizolyatsionnyye raboty (Heat Insulation) Moscow, Gostoptekhizdat, 1958. 254 p. 6,000 copies printed.

Ed.: Losev, B. S.; Executive Ed.: Martynova, M. P.; Tech. Ed.: Fedotova, I. G.

PURPOSE: This book is intended for foremen, and engineering and technical personnel of concerns dealing with heat insulating problems.

COVERAGE: This book provides general information in popular form on heat insulation and the exploitation of heat insulating materials, manufacture of these materials, and appropriate equipment. The authors outline principles of heat transfer and classify the equipment for heating and refrigerating. The capital invested for heat insulating equipment should be recovered by its exploitation within one year. Efficiency of proper heat insulating equipment varies from 85 to 95 percent. Resonable usage of one ton of insulating

Card 1/4

material leads to the economy of 200 tons of rated fuel per year. During the prewar period the Soviet industry manufactured large quantities of friable heat insulating products such as "ASBOTERMIT", "NOVOASBOZURIT", "ASBOSLIUDA" and others. Mastic heat-insulating construction parts were based on the above-mentioned materials. There are two serious disadvantages connected with application of mastic heat-insulating constructional parts, namely: necessity of preheating the equipment to be insulated and the labor involved being 2 to 5 times more than in the case when large formed heat-insulating parts are used. After the war the use of mastic heat-insulating construction parts was sharply reduced and production of slag wool was rapidly developed. This material is more economical and suitable for refrigeration and heat insulation up to +600°C. The book mentions that at the present there is no wide choice of heat insulating materials that can be used in construction processes. Nevertheless, production of heat-insulating raw materials and ready-made products develops rapidly.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

TM/bmd
10-21-58

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BOYKOV, A.G., inzh.; UTKIN, V.V., inzh.; SUKHAREV, M.F., inzh., nauchnyy red.; TABUNINA, M.A., red.izd-va; RUDAKOVA, N.I., tekhn.red.

[Heat insulation operations] Teploizoliatsionnye raboty. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 242 p. (MIRA 14:4)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye teplotekhnicheskikh i termoizolyatsionnykh rabot.
(Insulation (Heat))

BOYKOV, A.N.; SIGAL, L.M.

Use of appliances in work classes. Politekh.obuch. no.10: 36-38 O '59. (MIRA 13:2)

1. Srednyaya shkola No.69, Kuybyshev.
(Carpentry--Study and teaching)

TEREKHOV, A.S.; BOYKOV, A.V.

Investigating thermal processes in transmission units of motor vehicles. Trudy IPI no.237:58-64 '64.

Using stands with a circulating power in determining the efficiency of reducing gears. Ibid.:73-81

(MIRA 18:4)

BOYKOV, B.A., inzh.

Reduce the cross section of workings in curved railroad sections. Shakht.stroi. 4 no.9:5-7 S '60. (MIRA 13:8)

1. TSentrogiproshakht.
(Mining engineering) (Mine railroads)

BOYKOV, B.A., inzh.

Reducing the volume of mining work by the elimination of the projection of electric locomotives on curved sections. Ugol' 37 no.7:26-27 Jl '62. (MIRA 15:7)

1. Vsesoyuznyy tsentral'nyy gosudarstvennyy institut po proyektirovaniyu shakht.

(Mining engineering)
(Electric locomotives—Design and construction)

BOYKOV, B.V.

Radiolokatsiia i ee primenenie. Moskva, 1951.

Title tr.: Radiolocation and its application.

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

BOYKOV, B.V.; GRIF, A., redaktor; ZHURAVLEV, A., tekhnicheskiy redaktor.

[Flying machines] Letatel'nye apparaty. Moskva, Izd-vo Dosarm, 1951. 69 p. (MLRA 8:3)
(Flying machines)

BOYKOV, B.V.

Letatel'nye mashiny (Flying machines). Moskva, 1953. 159 p. (Vsesoiuz. dobrovol'noe o-vo sodeistviia Armii, Aviatsii i Flotu)

SO: Monthly List of Russian Accessions, Vol 7, No 9, Dec 1954

BOYKOV, B.V.; KOZLOV, S.G., redaktor; KARYAKINA, M., tekhnicheskiy redaktor.

[Flying machines] Letatel'nye mashiny. Moskva, Izd-vo Dosaaf, 1953, 154 p. (MLRA 8:10)
(Airplanes)

BOYKOV, B.V.

PHASE X TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 649 - X

BOOK

Call No.: AF647751

Author: BOYKOV, B. V.
Full Title: AVIATION ENGINES
Transliterated Title: Aviatsionnyye dvigateli

PUBLISHING DATA

Originating Agency: DOSAAF (All-Union Voluntary Society for the Promotion of the Army, Aviation and the Navy)
Publishing House: DOSAAF Publishing House
Date: 1954 No. pp.: 176 No. of copies: 11,000
Editorial Staff: None

PURPOSE AND EVALUATION: A textbook for members of the DOSAAF who are studying aviation in clubs and DOSAAF courses under the guidance of DOSAAF instructors. It is a good elementary textbook which gives basic information about aviation engines. The book is well illustrated with clear diagrams.

TEXT DATA

Coverage: In this textbook most attention is given to piston engines and approximately only 20% of the text is concerned with jet engines. In the introduction the author gives an outline of the history of the development of aviation engines in the USSR, mentioning names of famous designers and their engines.

Aviatsionnyye dvigateli AID 649 - X

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Aviatsionnyye dvigateli

AID 649 - X

Ch. V Jet Engines

Pages 141-172

The necessity of transition from piston engines to jet engines; reaction movement and jet engines; Russia, the fatherland of jet engineering; two basic groups: 1. rockets, gun powder, liquid propellants; 2. jet engines, ram jets, pulse jets, turbo-jets, turbo-propeller jets, turbo-jets with ducted fan, jets with compressors driven by piston engines.

Bibliography

173

No. of References: 15 Russian, 1941-1951

Facilities: Names of designers and types of engines appear in the text.

3/3

BOYKOV, B.V., dotsent

Apparatus for the bacteriological examination of air. Gig. i san. 24 no.9:74-76 S '59. (MIRA 13:1)

1. Iz Khar'kovskogo meditsinskofo instituta.
(AIR microbiology)

Country : BULGARIA
Category: Cultivated Plants. Fruits. Berries.

Abs Jour: RZhBiol., No 22, 1958, No 100430

Author : Popov, Emil; Boykov, Dimit'r; Panov, Vasil
Inst : -
Title : The State and the Possibilities of the Development of Horticulture in Bulgaria.

Orig Pub: Selskostop. nis"l, 1957, 2, No 6, 321-331

Abstract: In 1896, regardless of favorable natural conditions, orchards occupied about 4842 hectares; in 1929, the orchard area enlarged to 18644 hectares, among them 63.8% of the area under plums, 34.6% under mixed orchards (plum, sweet cherry, cherry, apple, pear, nuts, apri-

Card : 1/2

Country : BULGARIA
Category: Cultivated Plants. Fruits. Berries.

M

Abs Jour: RZhBiol., No 22, 1958, No 100430

cots, peach, quince), 1.36% under apple trees and 0.2% under pear trees. In 1944 the area increased to 55511 hectares, along with which the area under plums decreased (to 34%) and the area under apple trees increased (to 33%). In 1956 - to 11470 [?sic] hectares along with an enlargement of the areas under apricot, cherry, sweet cherry, peach, raspberry and wild strawberry. Shortcomings in the management of orchard cultivation are being discovered and measures for its improvement are being planned. -- K.M. Lyutikov

Card : 2/2

BOYKOV, G.A. (Leningrad, Fontanka, d.53, kv.24)

Surgical treatment of neurinoma of the parotid region in a 10-month-old infant. Vest.khir. 78 no.2:128-130 F '57. (MLRA 10:3)

1. Iz kafedry khirurgii detskogo vozrasta (zaveduyushchiy - professor A.V.Shatskiy) Leningradskogo pediatricheskogo meditsinskogo instituta

(NERVES, COCHLEAR, neoplasms
neurilemoma of paracochlear region in inf., surg. (Rus))
(NEURILEMMOMA, in inf. & child
paracochlear region, surg. (Rus))

BOYKOV, G. A., Cand of Med Sci -- (diss) "Intra-Tracheal Narcosis in Surgery for Young Children," Leningrad, 1959, 17 pp (Leningrad Pediatric Medical Institute) (KL, 1-60, 125)

BOYKOV, G.A. (Leningrad, Fontanka, d.53, kv.24)

Reaction of the skin to a rubber drain in thoracic surgery. Vest.khir. 82 no.4:41-44 Ap '59. (MIRA 12:6)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof.S.V. Geynats [deceased]) i kafedry patologicheskoy anatomii (zav. - prof. D.D.Lokhov [deceased]) Leningradskogo pediatricheskogo meditsinskogo instituta.
(CHEST--SURGERY) (DRAINAGE, SURGICAL)

BOYKOV, G.A. (Leningrad, nab.r.Fontanki, d.53, kv.24)

Intratracheal anesthesia in surgery of newborn and older infants. Vest.khir. 83 no.8:122-129 Ag '59. (MIRA 13:1)

1. Iz khirurgicheskoy kliniki usovershenstvovaniya vrachey (nach. - prof. P.A. Kupriyanov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova i kliniki khirurgii detskogo vozrasta (zav. - prof. A.V. Shatskiy [deceased]) Leningradskogo pediatricheskogo meditsinskogo instituta.

(ANESTHESIA, INTRATRACHEAL in inf. & chil.)

AVIDON, D.B., kand.med.nauk; BAIROV, G.A., kand.med.nauk; BUTIKOVA, N.I., dotsent, kand.med.nauk; BOYKOV, G.A., kand.med.nauk; VERESHCHAGINA, L.N., kand.med.nauk; GONCHAROVA, M.N., prof., doktor med.nauk; ZHOLOBOV, L.K., vrach; ZEMSKAYA, A.G., kand.med.nauk; KAYSAR'YANTS, G.A., dotsent, kand.med.nauk; KOLESOV, A.P., doktor med.nauk; KONDRAT'YEV, A.P., kand.med.nauk; KORCHANOV, G.I., kand.med.nauk; KUTUSHEV, F.Kh., kand.med.nauk; LEVINA, O.Ya., kand.med.nauk; LYANDRES, Z.A., prof., doktor med.nauk; MOROZOVA, T.I., kand.med.nauk; MIRZOYEVA, I.I., kand.med.nauk; PANUSHKIN, V.S., kand.med.nauk; RASTORGUYEV, A.V., vrach; RUDAKOVA, T.A., kand.med.nauk; SAVITSKAYA, Ye.V., kand.med.nauk; SVISTUNOV, N.I., vrach; CHISTOVICH, G.V., kand.med.nauk; YAKOVLEVA, T.S., vrach; MARGORIN, Yevgeniy Mikhaylovich, prof., red.; DOLETSKIY, S.Ya., red.; VERESHCHAGINA, L.N., red.; RULEVA, M.S., tekhn.red.

[Operative surgery on children] Operativnaia khirurgiia detskogo vozrasta. Leningrad, Gos.izd-vo med.lit-ry Medgiz, Leningr.otd-nie, 1960. 475 p. (MIRA 13:12)

(CHILDREN--SURGERY)

IZBINSKIY, A.L. (Leningrad - 25, Marata, d.10, kv.6); BOYKOV, G.A.

Tracheostomy tube for artificial respiration. Grud.khir. no.3: 98-101 '61. (MIRA 14:9)

1. Iz kliniki khirurgii usovershenstvovaniya vrachey No.1 (nach. - general-leytenant meditsinskoy sluzhby prof. P.A. Kupriyanov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(TRACHEA--SURGERY) (RESPIRATION, ARTIFICIAL)

MOYKOV, G.A.; UVAROV, B.S.; FYAYT, L.A.; LYUBICHEVA, Z.L.

Characteristics of general anesthesia in bronchgraphy in young children. Khirurgiia 37 no.4:27-32 '61. (MIRA 14:4)

1. Iz kliniki khirurgii usovershenstvovaniya vrachey i kafedry anesteziologii (nach. - prof. P.A. Kupriyanov) Voyenno-meditsinskoyordena Lenina akademii imeni S.M. Kirova.
(ANESTHESIA) (BRONCHI—RADIOGRAPHY)

PILIPENKO, A.T.; SHPAK, E.A.; BOYKO, Yu.P.

Determination of titanium in steels ores, and aluminum alloys by means of N-furoylphenylhydroxylamine. Zav. lab. 31 no.2:151-154 '65.
(MIRA 18:7)

1. Kiyevskiy gosudarstvennyy universitet im. T.G.Shevchenko.

BOYKOV, G. P.

Boykov, G. P.

"Heating Bodies with Radiant Heat." Min Higher Education USSR. Tomsk Order of Labor Red Banner Polytechnic Inst imeni S. M. Kirov. Tomsk, 1955. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya Letopis', No. 27, 2 July 1955

БОЙКОВ Г.П.

KRUPIN, A.F.; BOYKOV, G.P.

Cooling of particles in the spray cone during electric metal spraying. Izv.TPI 85:321-325 '57. (MIRA 10:12)

1.Predstavleno prof. doktorom tekhn.nauk A.N. Dobrovidovym i prof. doktorom tekhn.nauk G.I. Fuks.
(Metal spraying)

Бойков, Г.П.

BOYKOV, G.P.

Heating of bodies subjected to the action of radiation heat. Report No.1. Izv. TPI 89:33-42 '57. (MIRA 10:12)
(Heat--Radiation and absorption)

BOYKOV, G.P.

Heating of bodies subjected to the action of radiation heat. Report No.2. Izv. TPI 89:43-53 '57. (MIRA 10:12)
(Heat--Radiation and absorption)

SOV/137-59-5-9500

24.5200

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 2 (USSR)

AUTHOR: Boykov, G.P.

TITLE: Heating-Up Bodies of Finite Dimensions by the Effect of Radiant Heat. Information 1.

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1958, Vol 101, pp 22 - 34

ABSTRACT: It is extremely difficult to solve a differential equation of heat conductivity for a three-dimensional problem with boundary conditions of the second order, described by the Stefan Boltzman law. Integration of the equation may be carried out over the line of heat flow, i.e., over the line connecting the center of the body with the coldest point of its surface. Therefore the differential equation of heat conductivity may be written down as follows

$$dT/d\tau = \xi \alpha (d^2T/dx^2),$$

where $\xi = 1 + \beta + \gamma$ and $\beta = (d^2T/dy^2)/(d^2T/dx^2)$;

$$\gamma = (d^2T/dz^2) / (d^2T/dx^2).$$

Card 1/2

Heating-Up Bodies of Finite Dimensions by the Effect of Radiant Heat. Information 1.

Integration can be carried out for a rectangular parallelepiped and a cylinder. For this purpose the values of the coefficients β and γ are found by solving the problem with boundary conditions of the 1st and 3rd order. For a rectangular parallelepiped the following equation was obtained:

$$\xi = 1 + R_1^2/(R_2^2 + 0.5\,R_1^2) + R_1^2/R_3^2 + 0.5\,R_1^2),$$

where $2R_1$ is the minimum dimension of the parallelepiped, and $2R_2$ and $2R_3$ are its other dimensions. For a cylinder the differential equation is expressed as follows:

$$dT/d\tau = \xi\alpha(d^2T/dr^2 + 1/r.$$ The quantity $dT/dr + \xi = 1 + + R_1^2/(2R_2^2 + R_1^2)$,

where R_1 is the cylinder radius and $2R_2$ is its height. The solutions obtained show that the temperature field along the line of heat flow in the body can be described, in the case of heat propagation in more than one dimension, by solutions which do not differ in their complexity from the one-dimensional problem.

Card 2/2 A.N.

SOV/137-59-5-9501

24.5200

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, pp 2 - 3 (USSR)

AUTHOR: Boykov, G.P.

TITLE: Heating up Bodies of Finite Dimensions by the Effect of Radiant Heat. Information 2.

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1958, Vol 101, pp 35 - 41

ABSTRACT: The author analyzes the problem of determining the temperature field along the line of heat flow for a rectangular parallelepiped, a cylinder, and a sphere during their heating by the effect of radiant heat. The problem is solved by integration of the equation of heat conductivity for an one-dimensional problem with a correcting coefficient. The solution is given both for the case of constant thermal-physical properties of the heated material and for properties being the functions of temperature. For the first case the following universal formula was obtained:

$$\theta = K_i \left\{ \xi F_o - \left[\xi/2 \left(\xi + 2 \right) - x^2/2R^2 \right] \right\},$$

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Heating up Bodies of Finite Dimensions by the Effect of Radiant Heat. Information 2.

where Θ is the dimensionless temperature; K_1 is the Kirpichev criterion; F_o is the Fourier criterion. For a rectangular parallelepiped $\xi = 1 + R_1^2/(R_2^2 + 0.5\,R_1^2) + R_1^2/(R_3^2 + 0.5\,R_1^2)$; for a cylinder $\xi = 2 + R_1^2/(R_2^2 + 0.5\,R_1^2)$; for a disk and an unbounded plate $\xi = 1 + 2.5\,R_1^2/(R_2^2 + 0.5\,R_1^2)$ and for a sphere $\xi = 3$. $2R_1$ is the dimension of the body along the line of flow; $2R_2$ and $2R_3$ are dimensions of the bodies in other directions. Results of determination of temperature by the described formulae and those obtained by experimental data are compared.

A.N.

Card 2/2

SOV/137-59-5-9499

24.5200

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 2 (USSR)

AUTHOR: Boykov, G.P.

TITLE: Analysis of Heating-Up Bodies by the Effect of Radiant Heat, on the Basis of the Theory of Similarity

PERIODICAL: Izv. Tomsk. politekhn. in-ta, 1958, Vol 101, pp 42 - 46

ABSTRACT: The author analyses heating up of bodies under the effect of radiant heat by a method based on the theory of similarity. To solve the problem the author used equations of heat conductivity with boundary conditions describing the heating up of a body by the Stefan Boltzman law. To obtain a generalized dependence of determinable quantities on the determining ones, the method of scale transformations was employed. The dependence for coefficients of heat conductivity and heat capacity are considered to be invariant with respect to scale transformation. As a result of the analysis the following equation was obtained: $\theta = f(X; F_0; \Lambda; C; K_1; \theta_0)$, where θ is the dimensionless temperature in various points of the heated body; F_0 is the

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SOV/137-59-5-9499

Analysis of Heating-Up Bodies by the Effect of Radiant Heat, on the Basis of the Theory of Similarity

Fourier criterion; Λ is the dimensionless coefficient of heat conductivity of the heated material; C is the dimensionless heat capacity; K_i is the Kirpichev criterion and θ_o is the dimensionless initial temperature of the body. The author presents an empirical formula for the surface temperature of an infinite steel cylinder heated by the effect of radiant heat, which reads as follows:

$$\theta_n = \left[\theta_o^2 + 2K_iF_o\right]^{0.5}.$$

A.N.

Card 2/2

BOYKOV, G.P.

Calculating the heating of steel, taking into account the heat of recrystallization. Izv.TPI 101:47-50 '58. (MIRA 13:5)
(Steel--Thermal properties)

KRUPIN, A.F.; BOYKOV, G.P.

Cooling rate and laminar structure in metal spraying. Izv.TPI 101:51-54 '58. (MIR 13:5)

1. Predstavleno prof. A.N. Dobrovidovym i prof. G.I.Fuks.
(Metal spraying)

66521

SOV/137-59-7-15998

18.8100

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 7, p 250 (USSR)

AUTHORS: Boykov, G.P., Negodyayeva, N.N., Nikolayeva, G.V.

TITLE: Quasi-Stationary Heating of a Plate With Additional Walls

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1958, Vol 101, pp 55 - 58

ABSTRACT: Information is given on a method of determining thermal and physical characteristics of a substance. The method is based on the quasi-stationary process of heating-up a body. The experimental installation is based on the theory of heating up an unbounded plate of the investigated material under the effect of a constant heat flow. The transmission of the constant flow into the plate is brought about by constant-power electric heaters pressed against the lateral surfaces of the plate. An additional non-conducting thin wall is placed between the metallic plate and the heater. After a certain period following initial heating of the plate, a quasi-stationary process takes place, i.e. the difference between the temperatures on two spots of the system remains the same, but the temperature on each spot changes according to a linear law. This is confirmed by experimental data. The plate thick-

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4

66571

Quasi-Stationary Heating of a Plate With Additional Walls SOV/137-59-7-15998

ness is small in order to approach the unbounded condition so that the quasi-stationary process occurs at the beginning of heating-up. An equation is presented showing the process of heat propagation and the calculation is given for the heating-up of a 20 mm thick steel plate by a heat flow from a heater with a capacity of 10,000 cal/m^2 per hour. The described method can be used for experimental work to determine thermal and physical properties of materials.

V.F. 4

Card 2/2

24.7100, 24.7300

65730

SOV/139-59-2-29/30

AUTHORS: Boykov, G.P. and Kuchin, V.D.

TITLE: On the Problem of the Temperature Field in a Growing Crystal

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 175-176 (USSR)

ABSTRACT: The authors suggest that the large scatter in experimental values of the electric strength of ionic crystals (Ref 1) is due to stresses produced during growth of these crystals. Mechanical deformations are produced in crystals because of thermal stresses due to non-uniform or too rapid cooling of these crystals. The authors derive an equation which gives the temperature field in a growing crystal (final radius R, length l)

$$T(r,Z) = T_f + (T_f - T_o) \times \sum_{n=1}^{n=\infty} A_n J_o(\mu_n \frac{r}{R}) \times$$

$$\times \exp(-\mu_n \frac{Z}{R}) \frac{1-\exp(-2\mu_n \frac{l-Z}{R})}{1-\exp(-2\mu_n \frac{l}{R})} \qquad (5)$$

Card 1/2

On the Problem of the Temperature Field in a Growing Crystal

where r and Z are the radial and axial coordinates respectively, T_o and T_f are the ambient and melt temperatures respectively, λ is the thermal conductivity of the crystal, α is the heat transfer coefficient, μ_n are the roots of Eq (6) and A_n are given by Eq (7) (the values of μ_n and A_n may be taken from Lykov's work Ref 11). There are 11 references, 7 of which are Soviet and 4 English.

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M.Kirova
(Tomsk Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: April 26, 1958

24(8) SOV/170-59-5-6/18

AUTHOR: Boykov, G.P.

TITLE: Temperature Fields in Bodies of Finite Dimensions With Internal Heat Liberation (Temperaturnyye polya v telakh konechnykh razmerov pri vnutrennem teplovydelenii)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 5, pp 36-45 (USSR)

ABSTRACT: The author investigates the problem of temperature distribution along the axes of symmetry of a body symmetrical with respect to coordinates whose origin is located in the center of its cross-section. The two dimensions of the cross-section are finite, and that along the z-axis is large with respect to the former and is assumed to be infinite. A source of heat liberation, which is time-independent and of the same magnitude per each cubic meter of the body, operates within it. The problem consists in determining the distribution of temperatures along the x- and y-axes from the origin to the surface points under the following assumptions: the temperature of the surrounding medium, the coefficients of heat conductivity and heat exchange are constant quantities; the heat conductivity coefficient does not depend

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Temperature Fields in Bodies of Finite Dimensions With Internal Heat Liberation

upon the temperature; the coefficient of heat exchange and the temperature of the medium are the same at any side of the body. The author writes down the system of differential equations describing the process and complementary conditions of symmetry and boundary values. He finds then an approximate solution of this system taking into consideration the shape of the body and the interrelation of its dimensions. He applies the formulae obtained to the cases of elliptical, rectangular and square cross sections of an infinitely long bar, presents a numerical example of calculations for a 80 x 160 mm rectangular bar, and compares the results with the values obtained by another method, proposed by A.P. Vanichev.

Card 2/3 There are: 1 schematic diagram, 1 table and 2 Soviet references

SOV/170-59-5-6/18

Temperature Fields in Bodies of Finite Dimensions With Internal Heat Liberation

ASSOCIATION: Politekhnicheskiy institut imeni S.M. Kirova (Polytechnical Institute imeni S.M. Kirov), Tomsk.

Card 3/3

BOYKOV, G.P.

Investigating the transmission of radiant heat throughout a body on the basis of the similitude theory. Izv. vys. ucheb. zav.; chern. met. no.8:199-201 '60. (MIRA 13:9)

1. Tomskiy politekhnicheskiy institut.
(Heat--Transmission) (Dimensional analysis)

84267

S/170/60/003/010/012/023
B019/B054

11.9300

AUTHOR: Boykov, G. P.

TITLE: I. Quick Calculation of the Heating of Bodies Under the Action of Radiation Heat

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 10, pp. 85 - 87

TEXT: The present paper continues previous studies by the author (Refs. 1,2) in which he had developed a method of calculating the heating of bodies under the influence of radiation heat. This method is based on the use of a recurrence formula, and the so-called "spheres of time" are considered one after another. In order to determine, for example, the temperature distribution $T_m(r)$ in an infinitely long cylinder at the m-th instant, it is necessary to know the temperature distribution at the (m-1)th instant, which can only be determined if the distribution at the (m-2)th instant is known, and so on. Thus, the temperature distribution at any moment must be known to determine the distribution

Card 1/2

at any later moment. The smaller the steps are, the more accurate will the solution be. This method can be used to calculate temperature distributions quickly. For this purpose, the solution obtained for T_m in Ref. 1 is used, from which an approximate formula is derived. Only the heat flux on the surface must be known, and the temperature distribution can be calculated without the method of "time zones". Numerical computations were made for a steel cube (side length 0.457 m) which is heated in a furnace from 20°C to 900°C. The temperature in the cube center was computed by the approximate formula, and measured. A comparison of the theoretical and experimental results is satisfactory (see Table). There are 1 table and 4 Soviet references.

ASSOCIATION: Politekhnicheskiy institut im. S. M. Kirova, g. Tomsk
(Polytechnic Institute imeni S. M. Kirov, Tomsk)

SUBMITTED: February 12, 1960

88013

S/170/60/003/012/010/015
B019/B056

11.9100

AUTHORS: Boykov, G. P., Korolenko, Yu. A.

TITLE: Temperature Field in Bodies With Ellipsoidal Cross Section in the Case of Internal Thermal Sources

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 12, pp. 78-80

TEXT: In an earlier paper, Boykov was able to give a relation that permits calculation of the temperature distribution along the axes of a body with elliptic cross section. In the present paper, the authors proceed from a set of equations describing the steady temperature field of such a body, and obtain the following relation for any point on the cross section of the body:

$$t(x,y) = t_f + W(R_1R_2)\left\{\frac{1}{\alpha(R_1+R_2)} + \frac{1}{4\lambda} - \frac{W(R_2x^2+R_1y^2)}{2\lambda(R_1+R_2)}\right\}$$

Card 1/2

88013

Temperature Field in Bodies With Ellipsoidal Cross Section in the Case of Internal Thermal Sources

S/170/60/003/012/010/015
B019/B056

Here, R_1 and R_2 are the radii of the ellipse; x, y are the coordinates of the point of reference. A verification of this formula yielded excellent results for metallic bodies. There are 1 figure, 1 table, and 3 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut im. S. M. Kirova, g. Tomsk ("Order of the Red Banner of Labor" Polytechnic Institute imeni S. M. Kirov, Tomsk)

SUBMITTED: May 31, 1960

Card 2/2

BOYKOV, G.P.; KEYAYNERMAN, V.B.

Evaluating the thermal performance of electrical insulation.
Zhur. tekhn. fiz. 30 no.6:741-742 Je '60. (MIRA 13:8)

1. Tomskiy politekhnicheskiy institut im. S.M.Kirova.
(Electric insulators and insulation--Thermal properties)

BOYKOV, G. P.

"On the Problems of Two-Dimensional Temperature Fields."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

24.5200

S/649/61/000/139/009/018
I028/I228

AUTHOR: Boykov, G. P.

TITLE: Calculation of the radiant heating of bodies by the theory of similitude

SOURCE: Moscow, Institut inzhenero zheleznodorozhnogo transporta. Trudy, no. 139. 1961. Teoriya podobiya i yeye primeneniye v teplotekhnike: trudy pervoi mezhvuzovskoy konferentsii, 105–109

TEXT: An analytical method of calculating the heat flux at the surface of a body is obtained analytically:

$$q_{cT} = q_c(1 - th\, a k^2\tau) \qquad (10)$$

where q_{cT} = the heat flux at the surface, directed into the body, q_c = the radiant flux from the source of heat, τ = the time. Experimentally, for most metals, (10) can be written in the form:

$$Q_{cT} = q_{cT}/q_c = 1 - th\,\varphi(d) \qquad (12)$$

where $d = Ki$, and $Ki = q_c R_1/\gamma T_c$. Personalities mentioned are L. S. Eigenson, P. K. Konakov, and G. P. Ivantsov. There are 5 figures.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnical Institute)

Card 1/1

BOYKOV, G.P.

Relative effect of the heat of transformation on the soaking of an unlimited plate, and infinite cylinder and sphere. Izv. vys. ucheb. zav.; chern. met. no.2:148-150 '61. (MIRA 14:11)

1. Tomskiy politekhnicheskiy institut.
(Heat--Radiation and absorption)
(Phase rule and equilibrium)

S/196/62/000/016/007/011
E194/E155

AUTHOR: Boykov, G.P.

TITLE: Calculation of the heating of bodies by radiant heat on the basis of the theory of similarity

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.16, 1962, 3, abstract 16 G 12. (Tr. Mosk. in-ta inzh. zh.-d. transp., no.139, 1961, 105-110).

TEXT: Further development is proposed of the method of zonal calculation of the heating of bodies by radiant heat previously used by A.V. Lykov. An analytical-empirical solution is given to determine the unknown heat flux on the surface which is directed within the body and also the heat flux radiated from the surface. The opinion is expressed that changes in the dimensionless heat flux on the surface of the body and the radiant flux from the surface follow a hyperbolic tangential law. The proposed method of investigation permits established formulae to be extended to bodies with any values of the coefficient of heat transfer.
10 references.

Card 1/2 Abstractor's note: Complete translation.

Calculation of the heating of ... S/196/62/000/016/007/011
E194/E155

ASSOCIATION: Tomskiy politekhnich. in-t
(Tomsk Polytechnical Institute)

Card 2/2

21473
S/144/61/000/002/002/004
E032/E314

24.7600 (1043, 1158, 1160)

AUTHORS: Boykov, G.P., Docent and Korolenko, Yu.A., Senior Lecturer

TITLE: The Temperature Field in an Anisotropic Body with Internal Heat Evolution

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1961, No. 2, pp. 18 - 20

TEXT: A large number of problems in electrical engineering involve the internal heat evolution in bodies in which the thermal conductivity is not the same in all directions. The temperature distribution in such a system can be described by an equation in the form

$$\lambda_1 \frac{\partial^2 t}{\partial x^2} + \lambda_2 \frac{\partial^2 t}{\partial y^2} + W = 0 \qquad (1)$$

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The Temperature Field ....

and the initial conditions

$$\frac{\partial t(0;\ y)}{\partial x}=0;\quad \frac{\partial t(x;\ 0)}{\partial y}=0, \tag{2}$$

$$-\lambda_1\frac{\partial t(R_1;\ 0)}{\partial x}=\alpha[t(R_1;\ 0)-t_f],$$

$$-\lambda_2\frac{\partial t(0;\ R_2)}{\partial y}=\alpha[t(0;\ R_2)-t_f], \tag{3}$$

In these equations, the external conditions are characterised by the emissivity α and the temperature t_f of the external medium, and remain constant over the entire surface. In addition, W = const. The solution

$$t=-\varphi\frac{Wx^2}{2\lambda_1}-\psi\frac{Wy^2}{2\lambda_2}+D \tag{4}$$

The Temperature Field ....

in which φ , ψ and D are constants, satisfies the symmetry condition given by Eqs. (2). Substitution of Eq. (4) into Eq. (1) shows that in fact t is given by

$$t = -\varphi \frac{Wx^2}{2\lambda_1} - (1-\varphi)\frac{Wy^2}{2\lambda_2}, \qquad (5) .$$

This solution satisfies both the symmetry conditions and the differential equation (1) for a two-dimensional stationary field with internal heat evolution W . H o w e v e r , the solution given by Eq. (5) does not satisfy the conditions on the boundary. On the first approximation, the boundary conditions can be determined as described by Boykov (Ref. 1). According to this method, the heat-transfer equations can be written down in the form

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The Temperature Field ....

$$\frac{1}{2}\varphi\, WR_1+\frac{1}{2}\frac{WF_c}{l_\kappa}=\alpha\left[D-\varphi\,\frac{WR_1^2}{2\lambda_1}-t_f\right],$$

$$\frac{1}{2}(1-\varphi)\, WR_2+\frac{1}{2}\frac{WF_c}{l_\kappa}=\alpha\left[D-(1-\varphi)\frac{WR_2^2}{2\lambda_2}+t_f\right].$$

From which

$$\varphi=\left(1+\frac{B_1}{B_2}\right)^{-1},\qquad 1-\varphi=\left(1+\frac{B_2}{B_1}\right)^{-1}.$$

Here,

$$B_i=\frac{R_i}{2\alpha}+\frac{R_i^2}{2\lambda_i};\quad i=1;\ 2.$$

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The Temperature Field ....

and hence knowing φ , one finds that

$$D = t_f + W\left(\frac{1}{B_1} + \frac{1}{B_2}\right)^{-1} + \frac{WF_c}{2\alpha \cdot l_x} \quad (6)$$

Substituting for the constants the final solution is

$$t(x) = D - \frac{Wx^2}{2\lambda_1}\left(1 + \frac{B_1}{B_2}\right)^{-1} \quad (7)$$

$$t(y) = D - \frac{Wy^2}{2\lambda_2}\left(1 + \frac{B_2}{B_1}\right)^{-1} \quad (8)$$

Eq. (6) gives the temperature at the centre of the body, while Eqs. (7) and (8) give the distribution along the symmetry axes. These expressions must of course be regarded

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The Temperature Field ....

as approximate. Tables 1 and 2 give the temperature distributions along the symmetry axes in a beam of rectangular cross-section for $\lambda_1 = 5$ kcal/m hr deg, $\lambda_2 = 40$ kcal/m hr deg, $2R_1 = 0.5$ m, $2R_2 = 1$ m, $W = 5\ 000$ kcal/m^3hr, $\alpha = 10$ kcal/m^2 hr deg and $t_f = 0$ °C. The calculation was carried out using Eqs. (6), (7) and (8). The results obtained are compared with those computed for an infinite plate by the method of "detailed balance". There are 2 tables and 1 Soviet reference.

ASSOCIATION: Kafedra teoreticheskoy i obshchey teplotekhniki Tomskogo politekhnicheskogo instituta (Department of Theoretical and General Heat Engineering of Tomsk Polytechnical Institute)

SUBMITTED: March 2, 1960

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Table 1: Temperature Distribution Along the x-axis

x	Method: Infinite Plate Formula	Eqs. (6), (7)	Detailed Balance Method
0	156	97.7	70
$0.4R_1$	151	94.7	65
$0.8R_1$	136	85.7	56
R_1	125	79	50

Table 2: Distribution of Temperatures Along the y-axis

y	Method: Infinite Plate Formula	Eqs. (6), (8)	Detailed Balance Method
0	266	97.7	70
$0.4R_2$	263	96.7	69
$0.8R_2$	255	93.7	66
R_2	250	92.7	65

Card 8/8

BOYKOV, G.P., kand.tekhn.nauk, dotsent; KOROLENKO, Yu.A., inzh.

Nature of the temperature field in a rectangular beam in the presence of internal heat sources. Izv. vys. ucheb. zav.; energ. 4 no.11: 84-86 N '61. (MIRA 14:12)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut imeni S.M.Kirova. Predstavlena kafedroy teoreticheskoy i obshchey teplotekhniki.

(Thermodynamics)

BOYKOV, G.P.

Calculation of the heating of bodies subject to the action of radiant heat using the similitude theory. Trudy MIIT no.139:105-110 '61. (MIRA 16:4)

1. Tomskiy politekhnicheskiy institut.
(Thermodynamics) (Dimensional analysis)

BOYKOV, G.P.

Law governing the relation between excess temperatures of solids of finite dimensions. Inzh.-fiz.zhur. 5 no.3:107-109 Mr '62.
(MIRA 15:3)

1. Politekhnicheskiy institut, Tomsk.
(Heat--Conduction)

18 9500

S/139/62/000/006/026/032
E073/E435

AUTHORS: Boykov, G.P., Ivanov, V.V.

TITLE: On the rate of growth of a crystal

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.6, 1962, 167-168

TEXT: Mathematically, the heat conductivity during the growth of a crystal can be described by a system of differential equations given by E. Billig (Brit. J. Appl. Phys., 7, 1956, 375). If the top of a growing crystal is intensively cooled, the temperature field in the crystal can be expressed by

$$T(r, z) = T_f + (T_0 - T_f)\sum_{n=1}^{\infty} A_n I_0\left(\mu_n \frac{r}{R}\right) \times \exp\left(-\mu_n \frac{z}{R}\right) \frac{1-\exp\left(-2\mu_n \frac{l-z}{R}\right)}{1-\exp\left(-2\mu_n \frac{l}{R}\right)}; \quad (1)$$

where μ_n are the roots of the equation

$$\mu \frac{I_1(\mu)}{I_0(\mu)} = Bi$$

and the values A_n can be taken from work published by A.V.Lykov.

Card 1/3

S/139/62/000/006/026/032
E073/E435

On the rate of growth of a crystal

According to S.S.Kutateladze, the relation between the temperature gradient at the phase division boundary and the rate of growth of a crystal can be expressed by

$$L\gamma W = -\lambda(\text{grad } T)_{rp} \qquad (2)$$

where L - phase transformation heat, γ - specific gravity of the substance, $W = d\ell/d\tau$ - rate of growth of the crystal, λ - heat conductivity coefficient. The quality of the grown crystal depends to a large extent on adhering to Eq.(2). Consequently, when drawing crystals from melts it is necessary to select correctly the speed of growth. $(\text{grad } T)_{rp}$ at the base of the crystal as a function of r is calculated by means of Eq.(1)

$$(\text{grad } T)_{rp} = (\partial T/\partial z)_{z=0}$$

The average value of the gradient at the base of the crystal will be

$$(\text{grad } T)_{cp} = \frac{1}{\pi R^2}\int_F (\text{grad } T)_{rp}\,dF = -(T_0 - T_f)\frac{1}{\pi R^2}\sum_{n=1}^{\infty} A_n \frac{\mu_n}{R} \times \left[1 + \frac{2}{\exp\left(2\mu_n \frac{l}{R}\right) - 1}\right] \times \int_0^{2\pi} d\theta \int_0^R J_0\left(\mu_n \frac{r}{R}\right) r\,dr =$$

Card 2/3

$$= -2(T_0 - T_f)\frac{1}{R}\sum_{n=1}^{\infty} A_n I_1(\mu_n) \times$$

$$\times\left[1 + \frac{2}{\exp\left(2\mu_n \frac{l}{R}\right) - 1}\right].$$

Then, according to Eq.(2), we obtain the following equation, which in the first approximation can be used for estimating the speed of growth of the crystals.

$$\frac{dl}{d\tau} = \frac{2\lambda(T_0 - T_f)}{L\gamma R} \cdot \sum_{n=1}^{\infty} A_n I_1(\mu_n) \times \qquad (3)$$

$$\times\left[1 + \frac{2}{\exp\left(2\mu_n \frac{l}{R}\right) - 1}\right].$$

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M.Kirova
(Tomsk Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: December 22, 1961

S/196/63/000/003/004/012
A052/A126

AUTHORS: Boykov, G.P., Kuchin, V.D., Serykh, G.M.

TITLE: On the character of the temperature field of an irradiated solid dielectric

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no. 3, 1963, 6, abstract 3B44. (Izv. Kurganskogo mashinostroit. in-ta, 1, 1962, 23 - 26)

TEXT: Using the elementary-balance method an analytical calculation is carried out of the temperature field in a solid dielectric subjected to ionizing irradiation. The expressions derived make it possible to determine the temperature distribution over the thickness of the lamella of the irradiated dielectric. There is 1 figure and 1 reference.

N. Torbin

[Abstracter's note: Complete translation.]

Card 1/1

FUKS, G.I., doktor tekhn.nauk, prof.; BOYKOV, G.P., kand.tekhn.nauk, dotsent

Determination of the degree of blackness using two reference standards. Izv.vys.ucheb.zav.; energ. 5 no.11:88-90 N '62. (MIRA 15:12)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskiy institut imeni S.M. Kirova. Predstavlena kafedroy teoreticheskikh osnov teplotekhniki.

(Heat—Transmission)

BOYKOV, G.P.; GOLOVANOV, S.G.

Possibility of determining the latent heat of transition in steel bodies on the basis of the permanence principle. Trudy TEIIZHT 34:50-52 '62. (MIRA 16:8)

L 13158-63 EWP(r)/EWT(1)/EPF(n)-2/EWT(m)/BDS AFFTC/ASD/APGC/SSD Pu-4
EM S/170/63/000/004/013/017

AUTHOR: Boykov, G. P.

TITLE: Rapid calculation of heating of bodies under effect of radiant heat

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 4, 1963, 105-107

TEXT: The author considers a nonlinear problem of heating a body when heat is transferred to its surface according to the difference law between the temperature's fourth powers, assuming constancy of ambient temperature. He achieved good results in tracing the radiant heat flow variations on a solid surface. Types of bodies considered included metal plates, cylinders and spheres. Tabular data are adduced for these bodies, both for constant and variable thermophysical characteristics of the metal bodies. There are 2 tables.

ASSOCIATION: Politekhnicheskiy institut im. S. M. Kirova (Tomsk) (Polytechnic Institute im. S. M. Kirov, Tomsk)

SUBMITTED: Jan 4, 63

Card 1/1

SALOMATOV, V.V.; BOYKOV, G.P.

Initial period of heating solids by radiation with a variable temperature of the heat source. Izv. vys. ucheb. zav.; chern. met. 6 no.12:177-181 '63. (MIRA 17:1)

1. Tomskiy politekhnicheskiy institut.

IVANOV, V.V.; BOYKOV, G.P.

Determination of the rate of rowth of crystals, allowing for anisotropy. Izv. vys. ucheb. zav.; fiz. no. 3:169-170 '64. (MIRA 17:9)

1. Tomskiy politekhnicheskiy institut imeni Kirova.